Armed Forces College of Medicine

AFCM

Neuroscience module

Clinical Integrated Cases
Pretest 2

Question 1

Rigidity of Parkinson disease patients is related to which of the following?

a- diminished indirect circuit discharge

b- increased facilitatory impulses during movement initiation

c- decreased inhibitory supraspinal signals on spinal motor neurons

d- degeneration of striatal neurons

e- loss of GABA secreting neurons in the basal ganglia

Question 2

Which of the following is a basal ganglia structure correctly matched with its transmitter?

a- Globus pallidus externa neurons secrete dopamine.

b- Globus pallidus interna neurons secrete GABA

c- Substantia Nigra pars reticulata neurons secrete dopamine

d- Substantia Nigra pars Compacta neurons secrete glutamate

Question 3

What is the gene involved in the pathogenesis of Parkinson`s disease?

A. APP gene

B. PSEN1 gene

C. NF1 gene

D. SNCA gene

E. NF2 gene

Question 4

Which of the following describes the pathogenesis of Parkinson`s disease?

A. Inflammatory disease

B. Degenerative disease

C. Neoplastic disease

D. Vascular disease

E. Autoimmune disease

Question 5

Parkinson disease is caused by deficiency of dopamine in the brain. Dopamine can de synthesized from which of the following amino acids?

A.Tryptophan
B.Tyrosine
C.Arginine
D.Cysteine
E.Valine

Question 6

Which of the following is the catabolic end-product of dopamine?

a. 5-hydroxyindolacetic acid (5-HIAA)
b. Vanillylmandelic acid (VMA)
c. Homovanillic acid (HVA)
d. 5- Hydroxytryptamine
e. N- Acetylserotonin

Question 7

Which of the following is a drug when combined with L-dopa it decreases the needed doses of L-dopa in the treatment of a Parkinson patient?

a)Hydroxocobalamin
b)Bromocriptine
c)Selenium
d)Benztropine
e)Carbidopa

Question 8

Which of the following drugs could induce parkinsonism?

a)Antipsychotic drugs
b)Anticholinergics
c)Amantadine
d)MAOIs
e)L-DOPA

Question 9

You will expect to find the following during neurological examination of a patient with idiopathic Parkinson disease:

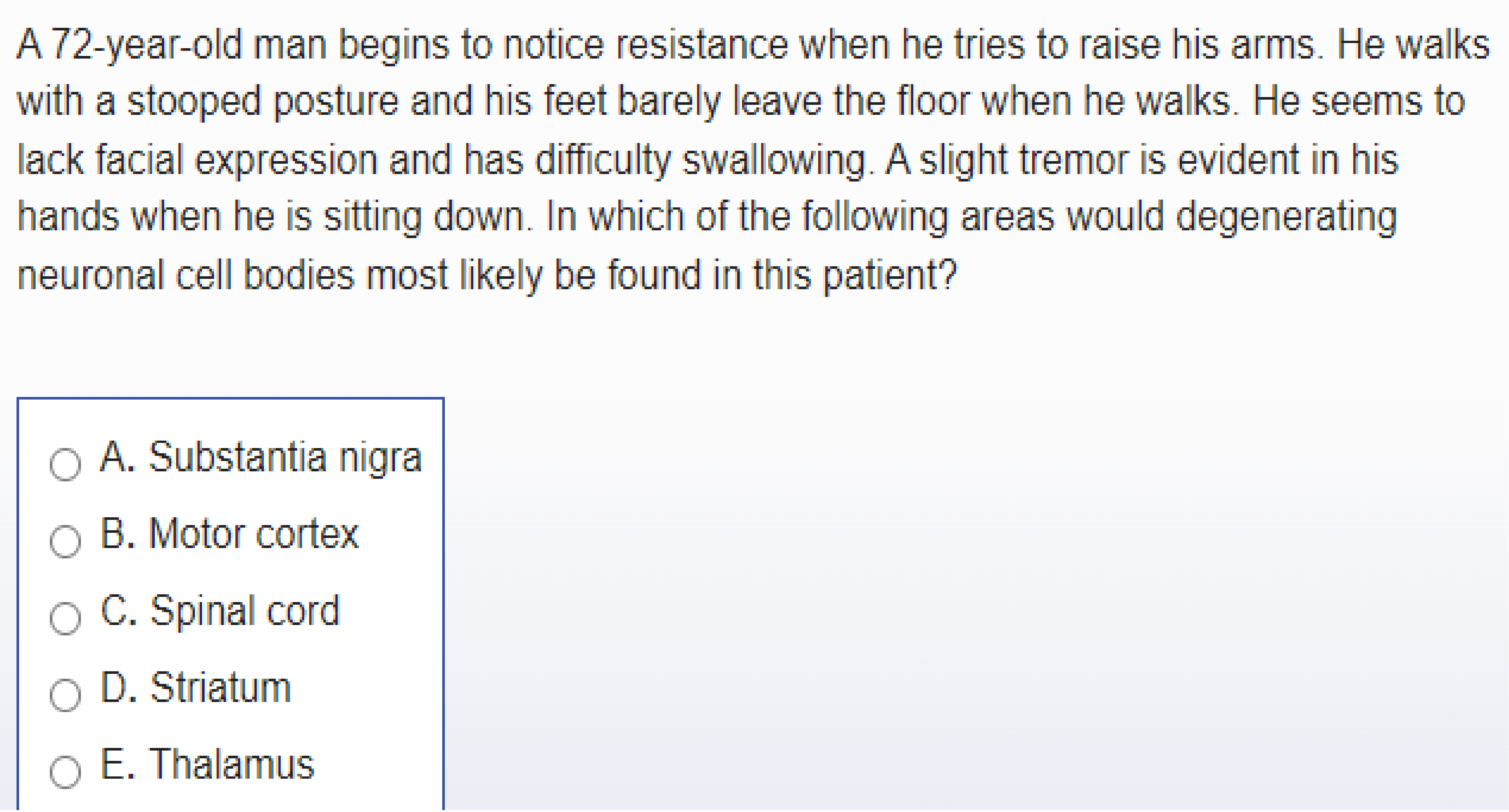
a. kinetic tremors
b. shuffling gait
c. muscle weakness
d. bilateral facial weakness
e. Normal muscle tone

Question 10

What is the mainly defective neurotransmitter in Parkinson patient ?

a. Dopamine
b. GABA
c. acetylcholine
d. Glutamate
e. cysteine

Question 11

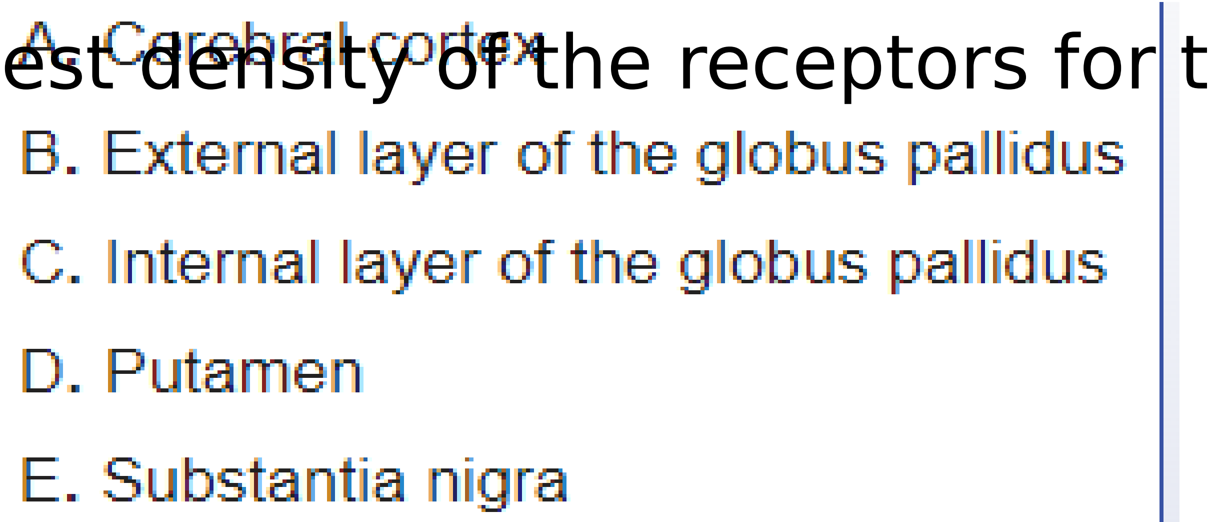


A 72-year-old man begins to notice resistance when he tries to raise his arms. He walks with a stooped posture and his feet barely leave the floor when he walks. He seems to lack facial expression and has difficulty swallowing. A slight tremor is evident in his hands when he is sitting down. In which of the following areas would degenerating neuronal cell bodies most likely be found in this patient?

- ○ A. Substantia nigra
- ○ B. Motor cortex
- ○ C. Spinal cord
- ○ D. Striatum
- ○ E. Thalamus

Question 12

A 68-year-old man consults a physician because he has noticed that he has trouble initiating movement. He first noticed a tremor at rest that improved with movement, but he now has a great deal of trouble moving altogether. His wife states that his face is no longer expressive. Once he is able to start walking, he finds it difficult to stop. His symptoms improve with carbidopa/levodopa therapy. This patient’s disease is related to deficient production of a neurotransmitter. In which of the following structures is the highest density of the receptors for this neurotransmitter located?



A. Cerebral cortex

B. External layer of the globus pallidus

C. Internal layer of the globus pallidus

D. Putamen

E. Substantia nigra

Thank you